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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,125	12/29/2000	Mitsuhiro Kanada	Q62454	6746

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2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

MAIL DATE	DELIVERY MODE
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07/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/750,125

Applicant(s)

KANADA ET AL.

Examiner

Victor S. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Applicants' remarks filed on 7/16/2007 have been entered. Claims 1-10, 16 and 17 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Rejections Based on Prior Art

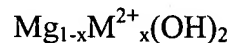
3. Claims 1, 3-10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/47573 in view of Kurisu et al. [US 6254847].

WO '573 relates to a low-density microcellular thermoplastic elastomeric foams with closed cells. The foam is made using supercritical fluid CO₂ as the blowing agent [abstract]. The polymer and the blowing agent are mixed in the melt stage in a tandem extruder under high temperature and pressure, subsequently the temperature and pressure are reduced to initiate foaming [page 3, lines 9-17]. Additional components of the foams include fire (flame) retardants [page 3, line 7]. Depends on pressure drop rates between 0.1 to 15 GPa, thermoplastic foams having various densities between 6 to 14 pcf, and uniform cell sizes of about 100 to 150 microns are obtained [page 4, lines 8-30]. Various foam properties such as the density, cell structure and size, compression set, etc. may be adjusted by varying the foaming conditions [page 5, lines 23-26]. The optimal compression set is less than about 30% [page 5, line 30]. Table 1 shows suitable foam materials include SANTOPRENE[®], SEBS resin, polyethylene, etc. Further, WO

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'573 expressly teaches that SANTOPRENE[®] is a blend of polypropylene and ethylene propylene (EPDM) copolymer [page 3, lines 2-5].

For claims 1, 3-10 and 17, WO '573 is silent about the use of composite metal oxide $\text{MgO} \cdot \text{ZnO} \cdot \text{H}_2\text{O}$ or $\text{MgO} \cdot \text{NiO} \cdot \text{H}_2\text{O}$ as flame retardant in the thermoplastic foam. However, prior art Kurisu relates to a metal oxide solid solution (hydrated composite metal oxide) in the form of crystal powder by the following formula:



wherein M^{2+} denotes at least one divalent metal ion selected from Ni^{2+} , Zn^{2+} , etc., and x denotes a number in the range of $0.01 \leq x < 0.5$

The crystal improves fluidity, processability and the like when the solid solutions are kneaded into resins for use as flame retardant additives [abstract; col. 1, line 61 through col. 2, line 1; col. 3, lines 33-34]. It would have been obvious to one of ordinary skill in the art to select and modify the thermoplastic foam resin of WO '573 with a suitable hydrated composite metal oxide such as $\text{MgO} \cdot \text{ZnO} \cdot \text{H}_2\text{O}$ or $\text{MgO} \cdot \text{NiO} \cdot \text{H}_2\text{O}$, motivated by the desire to improve the flame retardant property of the thermoplastic foams with improved processability.

4. Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/47573 in view of Kurisu et al. [US 6254847] and Applicants' admitted prior art JP-A-322168.

The teachings of WO '573 and Kurisu are again relied upon as set forth above.

For claim 2, applicants have admitted that it is known art to impregnate a pre-formed unexpanded thermoplastic molding, as taught by the prior art JP-A-322168 [specification, page 4, paragraph 2].

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For claim 16, applicants have admitted that it is well known that expanded materials are used in various pads for the purposes of soundproofing, cushioning, etc. in electronic appliances [specification, page 2, second paragraph].

Response to Argument

5. Applicants argue at Remarks pages 2-3 that the relied upon prior art is silent about the effect owing to the use of $\text{MgO} \cdot \text{ZnO} \cdot \text{H}_2\text{O}$ or $\text{MgO} \cdot \text{NiO} \cdot \text{H}_2\text{O}$, therefore the examiner's assertion amounts to improper hindsight. However, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

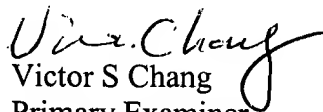
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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Victor S Chang
Primary Examiner
Art Unit 1771

7/18/2007